

FIG. 1

	Buyer		Seller			Excess Value
	A	B	A	B		
Amperes	60	50	50	60		
Res. Value	\$65.00	\$50.00	\$40.00	\$50.00		
Marginal Value	\$1.08	\$1.00	\$0.80	\$0.83		
BuyerA/SellerA	\$54.17		\$40.00			\$14.17
BuyerB/SellerB	\$50.00		\$50.00			\$0.00
					Total	\$14.17
BuyerA/SellerB	\$65.00		\$50.00			\$15.00
BuyerB/SellerA						\$10.00
					Total	\$25.00
						Match Value
						\$10.83

FIG. 2

Feature	Importance	Satisfaction	Source
Maximum Operating Temperature	1	0 at 140F 0.5 at 180F 1 at 200F	Operating Specs
Maximum Operating Temperature	1	0 at 0F 0.5 at -25 F 1 at -35F	Operating Specs
Nominal Voltage	1	1 at 12 0 otherwise	Operating Specs
Generated Amps @ 2000 RPM, 100F	1	0 at 45 0.5 at 70 1 at 78	Operating Specs
Refurb/Replace overnight US&CA	2	0 at 0 years .5 at 3 years 1 at 5 years	Warranty
Manufacturer	2	1 at Autolite, Delco 0 otherwise	Agreement
Diodes	1	1 at 200V rating 0 otherwise	Operating Specs
Price/Unit	2	1 at \$0 0 at \$115	Agreement
Delivery	1	1 at 6 days 0.5 at 12 week 0 at 21 weeks	Agreement
Qty	1	1 at 50 0.5 at 57 0 at 45	Agreement
Special	2	20 units/month	Agreement
Protocol	1	1.0 at Dutch 0.7 at Vikery 0.5 at English	Negotiation
Expiration	5	1 at 2001/01/01 0 at 2001/01/03	Negotiation

FIG. 3

Feature	Importance	Satisfaction	Source
Maximum Operating Temperature	1	0 at 140F 0.5 at 180F 1 at 200F	Operating Specs
Maximum Operating Temperature	1	0 at 0F 0.5 at -25 F 1 at -35F	"
Nominal Voltage	1	1 at 12 0 otherwise	"
Generated Amps @ 2000 RPM, 100F	1	0 at 50 0.5 at 72 1 at 78	"
Refurb/Replace US	2	1 at 2 years 0.5 at 1 year 0 at 0 years	Warrantee
Manufacturer	2	0 at unknown 0.5 at Tier 2 0.7 at Tier 1 1 at Autolite, Delco	Identity
Diodes	1	1 at 200V rating 0 otherwise	"
Price/Unit	2	1 at \$0 0 at \$110	Preference
Delivery	1	1 at 8 days 0.5 at 18 days 0 at 21 days	Preference
Qty	1	1 at 15 0 otherwise	Preference
Protocol	1	any	Preference
Expiration	2	1 at 2001/01/01 0 at 2001/01/05	Preference

**FIG. 4**

<b>Feature</b>	<b>Value</b>	<b>Source</b>
Maximum Operating Temperature	150	Operating Specs
Maximum Operating Temperature	-11	"
Voltage	12	"
Generated Amps @ 2000 RPM, 100F	60	"
Manufacturer	Delco	Identity
Diodes	200v	"
North America Warrantee	\$0 @ 1 yr \$8 @ 5 years	Agreement
Price/Unit	\$100 @ 10 \$98 @ 25 \$93 @ 50	"
Delivery	5 days	Agreement
Qty	10-300	Agreement
Protocol	Vikery	Agreement
Special	Flexible Delivery	Agreement

**FIG. 5**

<b>Feature</b>	<b>Value</b>	<b>Source</b>
Maximum Operating Temperature	160	Operating Specs
Maximum Operating Temperature	-15F	"
Voltage	12	"
Generated Amps @ 2000 RPM, 100F	65	"
Manufacturer	Tier1	Identity
Diodes	100V Standard 200V Special (+ \$8/Unit)	"
US Warrantee	1 yr	Agreement
Price/Unit	\$90	"
Delivery	7 days	Agreement
Qty	20-200	Agreement

**FIG. 6**

<b>Feature</b>	<b>Value</b>	<b>Source</b>
Refurb/Replace Overnight US & Mexico Warranty	3 yr	Agreement
Price/Unit	\$5 + 0.5% of unit price	"
For Manufacturer	Tier1, Autolite, Delco	"
Manufacturer	Tier1	Identity

**FIG. 7**

<b>Feature</b>	<b>Value</b>	<b>Source</b>
Refurb/Replace overnight CA Warranty	4 yr	Agreement
Price/Unit	\$4 + 0.5% of unit price	"
For Manufacturer	Tier1, Autolite, Delco	"
Manufacturer	Tier2	Identity

FIG. 8

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<termsheet>
  <owner>BuyerA3</owner>
  <feature>
    <name>amps</name>
    <importance>1</importance>
    <satisfaction>logistic,10,amps|0.0,40|0.5,55|1,60</satisfaction>
  </feature>
  <feature>
    <name>qty</name>
    <importance>1</importance>
    <satisfaction>logistic,15,qty|0.0,20|0.5,22|1,23</satisfaction>
  </feature>
  <feature>
    <name>SellerRating</name>
    <importance>1</importance>
    <satisfaction>logistic,15,SellerRating|0.0,0.5|0.5,0.8|1,1</satisfaction>
  </feature>
  <feature>
    <name>Warranty</name>
    <importance>1</importance>
    <satisfaction>linear,1,Warranty|0.0,0|0.5,1|1,3</satisfaction>
  </feature>
  <feature>
    <name>price</name>
    <importance>2</importance>
    <satisfaction>linear,0,price|0.0,100|0.5,50|1,0</satisfaction>
  </feature>
</termsheet>

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<offersheet>
  <owner>SellerA3</owner>
  <protocol>split</protocol>
  <feature>
    <name>amps</name>
    <value>60</value>
  </feature>
  <feature>
    <name>qty</name>
    <value>33</value>
  </feature>
  <feature>
    <name>Warranty</name>
    <value>3</importance>
  </feature>
  <feature>
    <name>price</name>
    <value>50</value>
  </feature>
  <feature>
    <name>SellerRating</name>
    <value>1.0</value>
  </feature>
</offersheet>

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FIG. 9

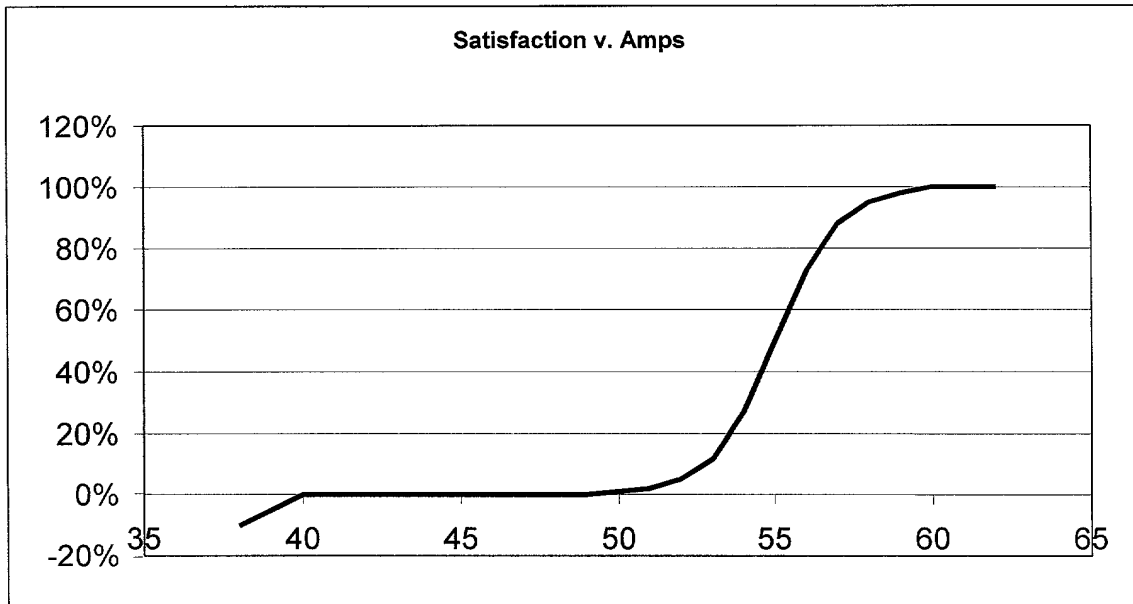


FIG. 10

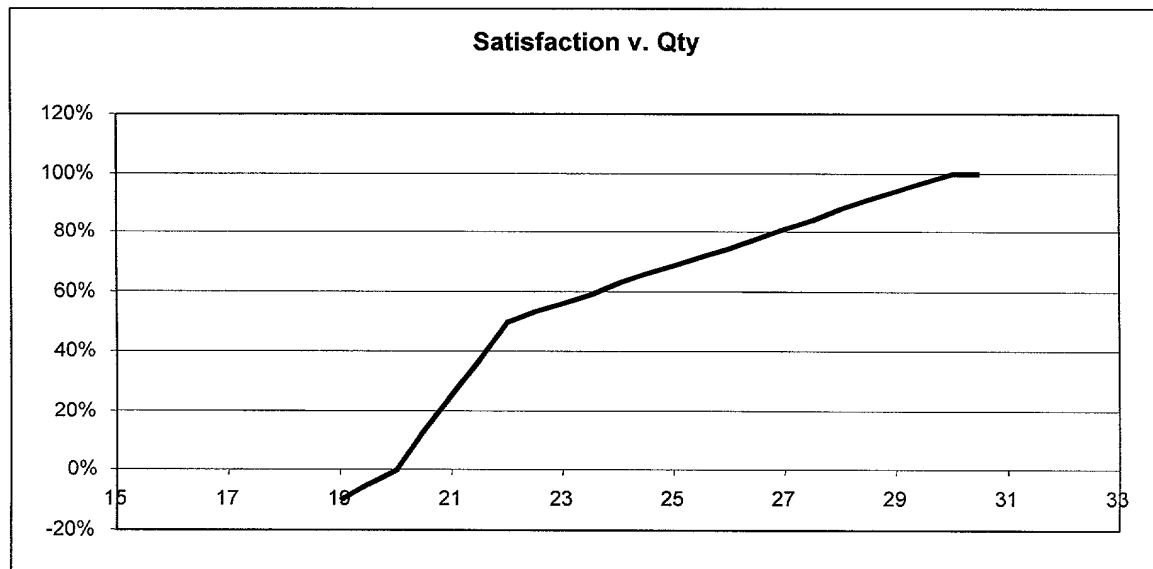


FIG. 11



FIG. 12

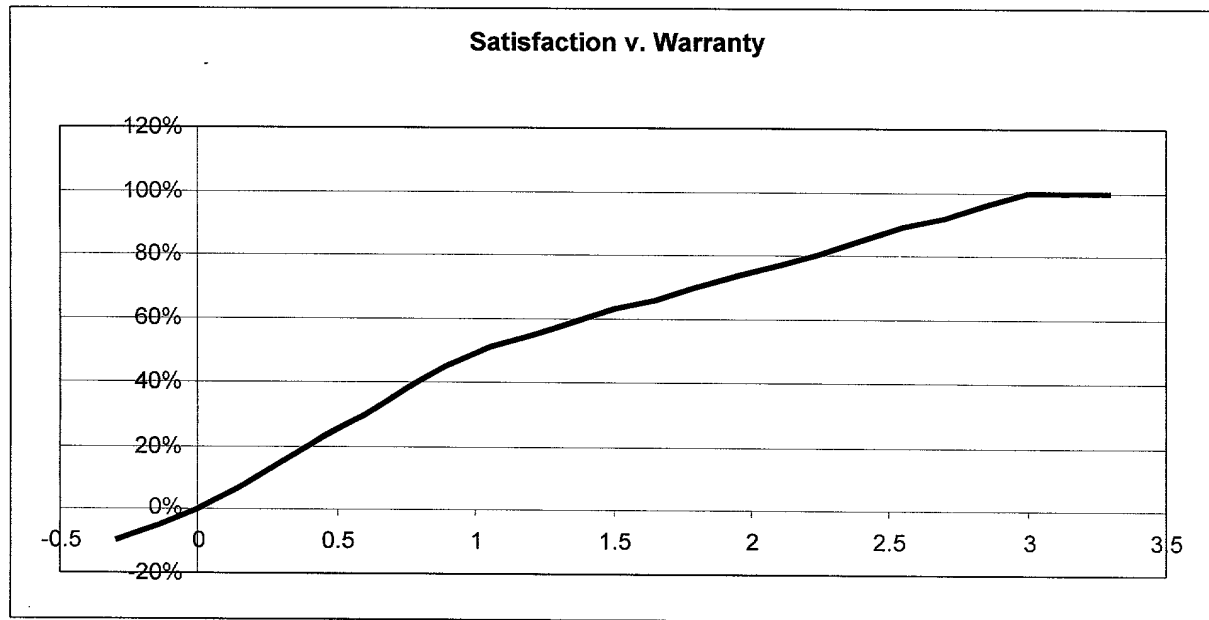


FIG. 13

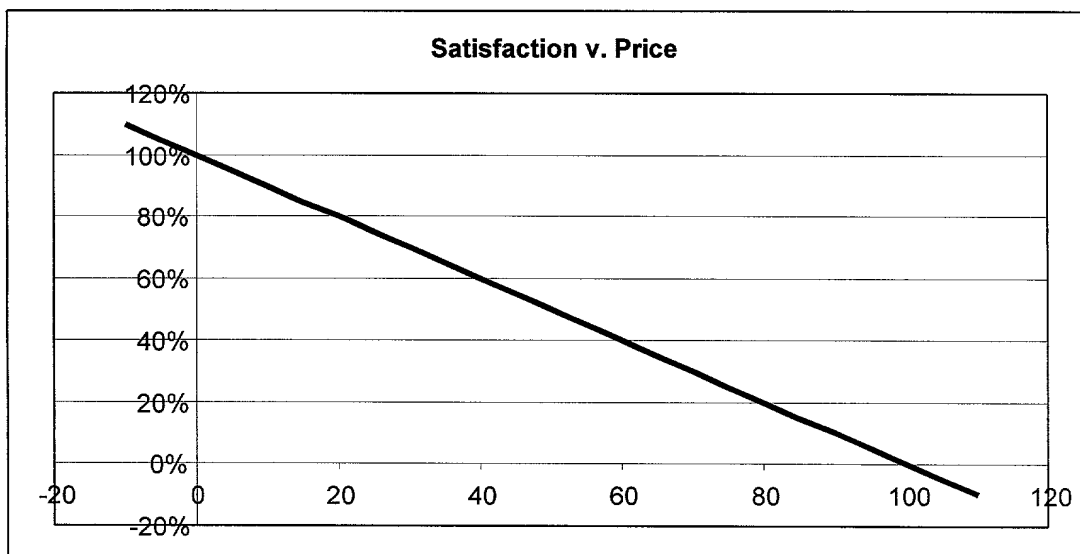


FIG. 14

$$\text{Logistic } (x, \alpha, b, t, m) = \frac{1}{1 - e^{(a \left( \frac{m-b}{t-b} \right) - x)}}$$

$$\text{Linear } (x, b, t, m) = \begin{cases} x \leq m \quad 0.5 \left( \frac{x-b}{m-b} \right) \\ \text{else } 0.5 + \left( \frac{x-m}{t-m} \right) \end{cases}$$

$$\text{Fitted Logistic } (x, \alpha, b, t, m) = \begin{cases} \text{if } (x \leq m) \min( \text{Logistic } (x, \alpha, b, t, m), \text{Linear } (x, b, t, m) ) \\ \text{else } \max( \text{Logistic } (x, \alpha, b, t, m), \text{Linear } (x, b, t, m) ) \end{cases}$$

FIG. 15

$$U_i = \max(0, \text{SatFn}_i)$$

$$\text{WtdSat} = \left( \frac{\sum_{i=1}^N w_i (1 - U_i)^2}{\sum_{i=1}^N w_i} \right)^{\frac{1}{2}}$$

$$\text{Excess Value} = (\text{SP} - \text{RP}) * \text{WtdSat}$$

FIG. 16

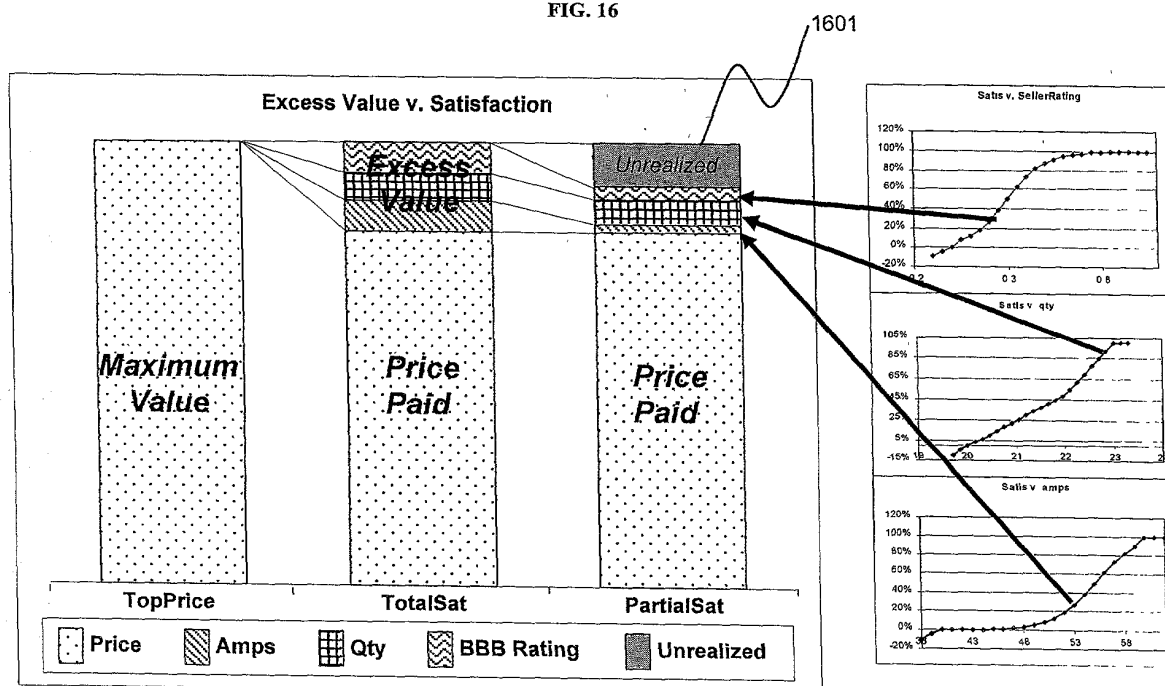


FIG. 17

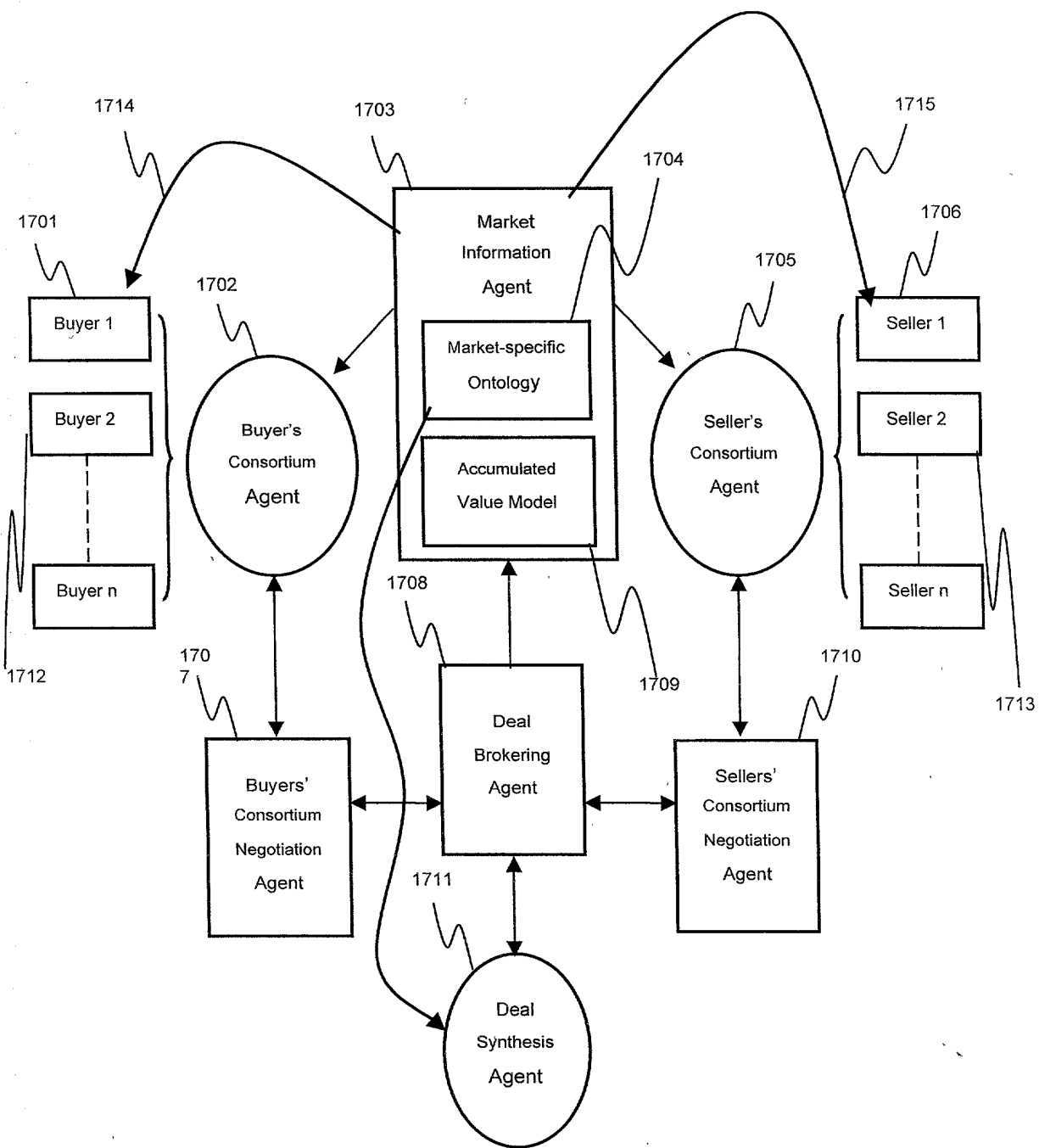


FIG. 18

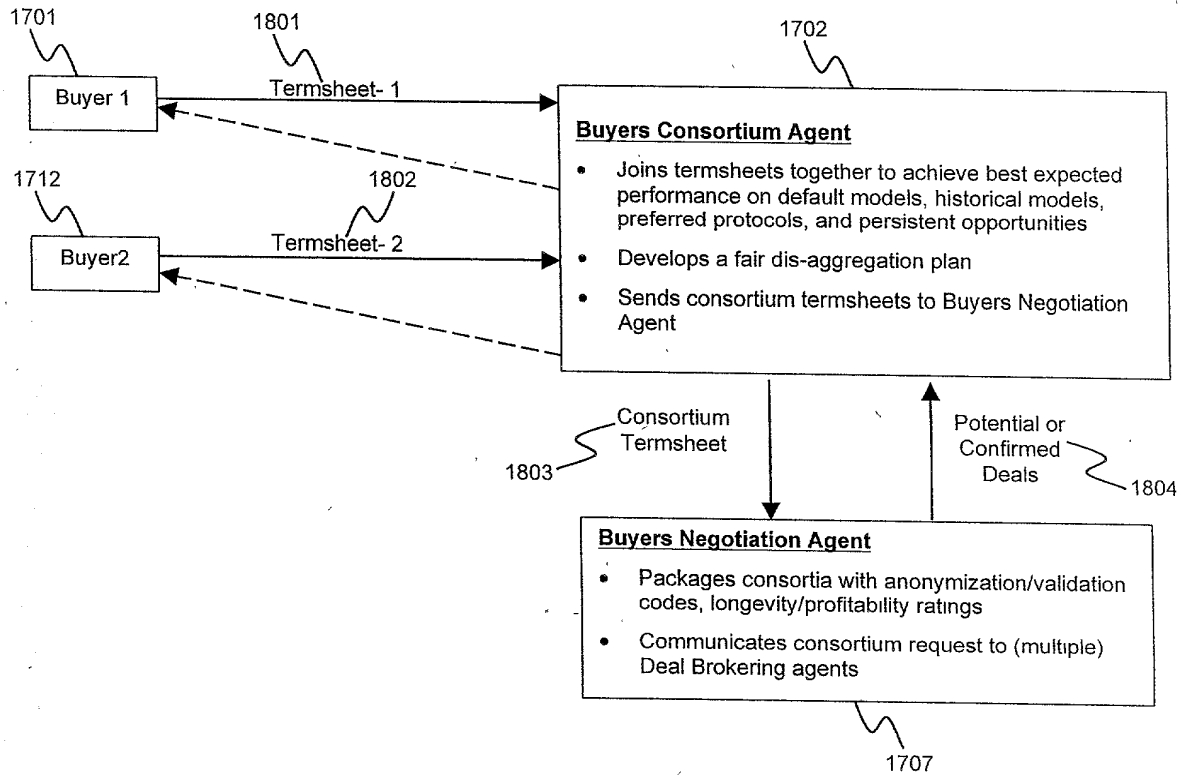
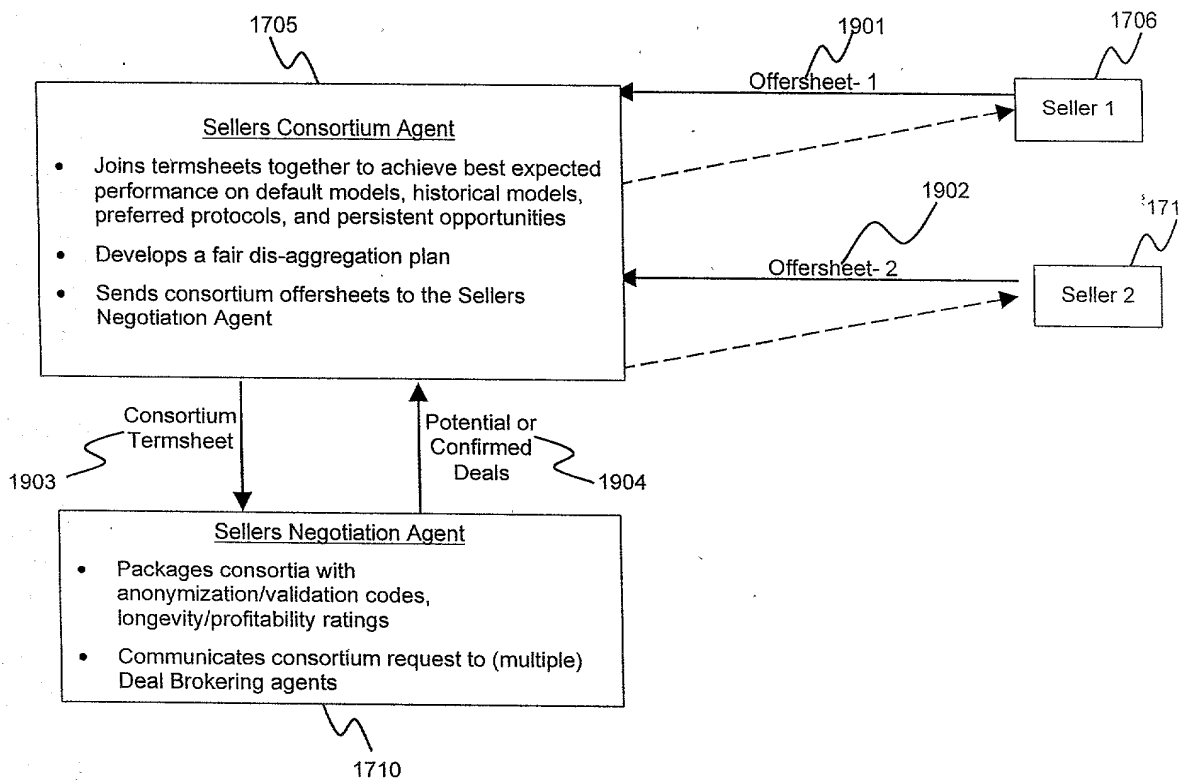


FIG. 19



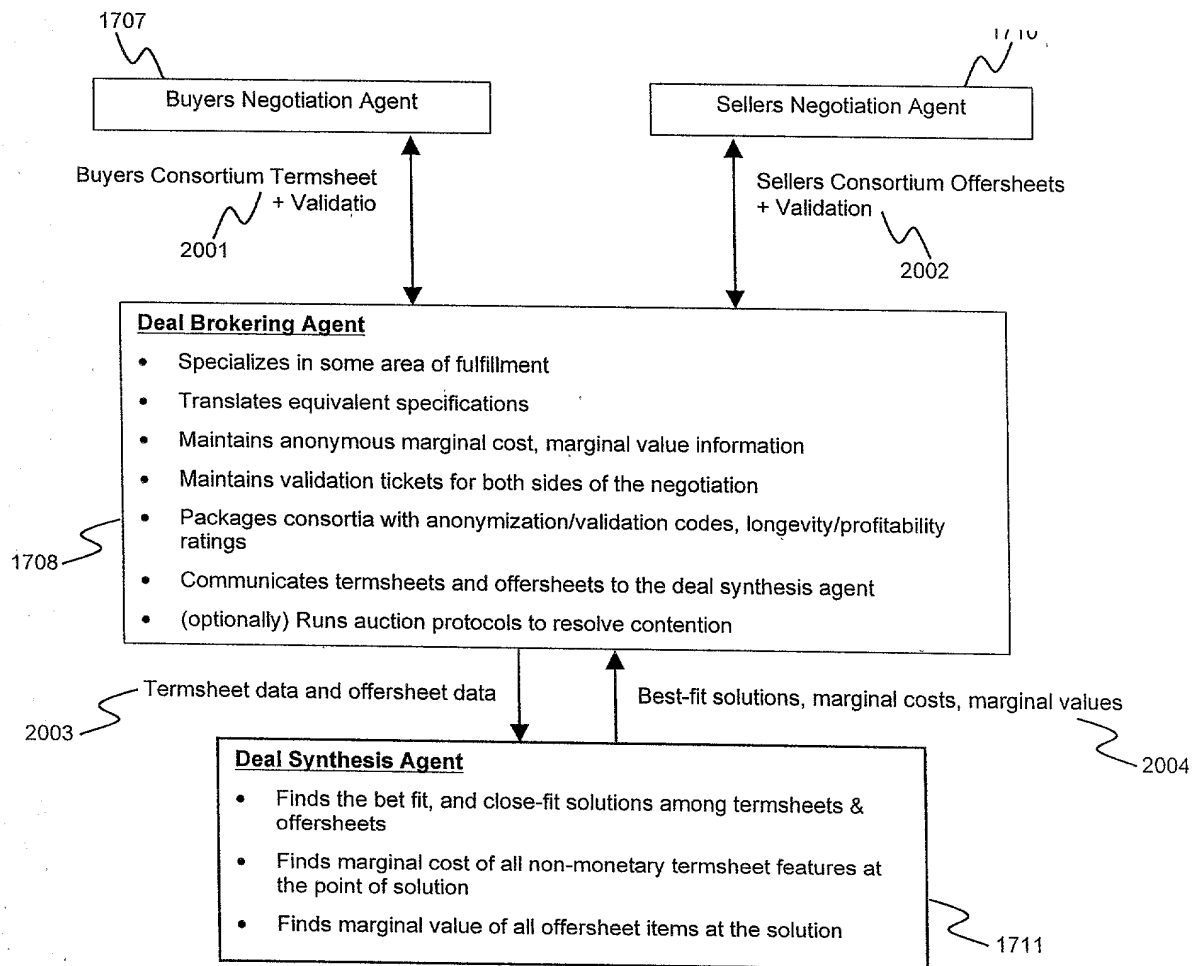


FIG. 21

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<marketsheet>
<dealsheet>
  <seller>SellerA3</seller>
  <qty>23</qty>
  <strike-price>75.000000</strike-price>
  <buyer>BuyerA3</buyer>
  <feature> <name>amps</name>
    <value>60.000000</value>
    <satisfaction>1.000000</satisfaction>
    <marginal>6.250000</marginal>
  </feature>
  <feature> <name>qty</name>
    <value>23.000000</value>
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    <marginal>6.250000</marginal>
  </feature>
  <feature> <name>SellerRating</name>
    <value>1.000000</value>
    <satisfaction>1.000000</satisfaction>
    <marginal>6.250000</marginal>
  </feature>
  <feature> <name>Warranty</name>
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    <satisfaction>1.000000</satisfaction>
    <marginal>6.250000</marginal>
  </feature>
  <feature> <name>price</name>
    <value>75.000000</value>
    <satisfaction>0.250000</satisfaction>
    <marginal>25.000000</marginal>
  </feature>
  <excess>
    <total>1150.000000</total>
    <buyer>575.000000</buyer>
    <seller>575.000000</seller>
  </excess>
</dealsheet>
<excess>1150.000000</excess>
</marketsheet>

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FIG. 22

From	To	Message	FIPA message	Example Message
Buyer/Seller	CFA	Register	request	(request) :sender Buyer/Seller :receiver CFA :content (<unknown>)
Buyer/Seller	CFA	Term Sheet	cfp	(cfp) :sender Buyer/Seller :receiver CFA :content (<term sheet>)
Buyer/Seller	CFA	Retract Term Sheet	cancel	(cancel) :sender Buyer/Seller :receiver CFA :content (<term sheet>) :ontology <ontology>
Buyer/Seller	CNA	Accept Deal	accept-proposal	(accept-proposal) :sender Buyer/Seller :receiver CNA :content (<deal sheet>) :in-reply-to <proposal>
Buyer/Seller	CNA	Reject Deal	reject-proposal	(reject-proposal) :sender Buyer/Seller :receiver CNA :content (<deal sheet>) :in-reply-to <proposal>

FIG. 23

From	To	Message	FIPA message	Example Message
CFA	Buyer/Seller	Market Marginal Value Functions	inform	(inform) :sender CFA :receiver Buyer/Seller :content (<marginal market values>)
CFA	CNA	Create coalition - joint and independent term sheets	request	(request) :sender CFA :receiver CNA :content (<joint term sheet <term sheet ...>>)
CFA	CNA	Retract Term Sheet	cancel	(cancel) :sender CFA :receiver CNA :conversation-id <conv. id>

FIG. 24

From	To	Message	FIPA message	Example Message
CNA	Buyer/Seller	Deal Sheet	propose	(propose) :sender CNA :receiver Buyer/Seller :content (<deal sheet>) :in-reply-to <request :ontology <ontology > :language <language >
CNA	Buyer/Seller	Success	inform	(inform) :sender CNA :receiver Buyer/Seller :content (<deal sheet>)
CNA	Buyer/Seller	Failure	failure	(failure) :sender CNA :receiver Buyer/Seller :content (<deal sheet > <reasons>)
CNA	CFA	last words - failure	failure	(failure) :sender CNA :receiver CFA :content (<joint term sheet > <reasons>)
CNA	CFA	last words - success	inform	(inform) :sender CNA :receiver DBA :content (<joint term sheet>)
CNA	DBA	Term Sheet	cfp	(cfp) :sender CNA :receiver DBA :content (<term sheet>)
CNA	DBA	Retract Term Sheet	cancel	(cancel) :sender CNA :receiver DBA :conversation-id <conv. id >
CNA	DBA	Reject Deal Sheet	accept-proposal	(accept-proposal) :sender CNA :receiver DBA :content (<deal sheet>) :in-reply-to <proposal
CNA	DBA	Accept Deal Sheet	reject-proposal	(reject-proposal) :sender CNA :receiver DBA :content (<deal sheet>) :in-reply-to <proposal>

FIG. 25

From	To	Message	FIPA message	Example Message
DBA	CNA	Deal Sheet	propose	(propose) :sender DBA :receiver CNA :content (<deal sheet>) :in-reply-to <request> :ontology <ontology> :language <language>
DBA	CNA	Deal Acceptance	inform	(inform) :sender DBA :receiver CNA :content (<deal sheet>)
DBA	CNA	Deal Failure	failure	(failure) :sender DBA :receiver CNA :content (<deal sheet> <reasons>)
DBA	CNA	Deal Retraction	cancel	(cancel) :sender DBA :receiver CNA :conversation-id <conv. Id>